Therefore, permitting requirements do not apply to response actions which occur onsite. "Onsite" for permitting purposes is defined to include the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. 40 C.F.R. § 300.400(e). It appears that the location of the water supply point will not be determined by proximity to the contamination but will be controlled by other factors not related to the remedy. Because it is not necessary to locate the water supply connection above the contaminated groundwater or in very close proximity to the contamination, the water supply connection point will be classified as offsite. Therefore, all legal requirements for supplying drinking water to the public will be applicable.

6. ODW considers the hydrogen peroxide/ozone process to be an experimental one and not a proven technology and therefore will not give approval for this technology to be used at this time.

EPA Response: For a number of other factors described above in EPA's responses to Community Comments 3, 7, and 10 and to the City of Glendale's Comment 2, EPA has selected Alternative 2 in combination with Alternative 7 as the Glendale North OU interim remedy. These alternatives include air stripping or liquid phase GAC to remove the VOCs from the extracted, contaminated groundwater.

COMMENTS BY ITT GENERAL CONTROLS[1]

II. Nature and Extent of Groundwater Threat not Properly Identified

A. Data Generation

1. II. A. 1. - ITT stated that the Glendale RI, Glendale North FS and Proposed Plan do not demonstrate that EPA adequately designed the sampling and analysis plan (SAP) for the Glendale North OU to ensure that the required data are collected and to allow the public to comment on the SAP. Specifically, ITT believes that the RI does not address the question of whether the sampling plan was modified appropriately to evaluate horizontal extent of shallow groundwater or whether adequate justification was provided for the siting of vertical profile borings/shallow monitoring wells (VPBs). In addition, ITT stated that the RI does not reference the information

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[1] Note that the "EPA documents" referred to by ITT in its September 4, 1992 letter to EPA include: the Remedial Investigation (RI) for the Glendale Study Area (GSA) (January 1992), the Feasibility Study (FS) for the Glendale Study Area North Plume Operable Unit (April 1992) and the Proposed Plan for the Glendale North OU (July 1992).

in the Administrative Record demonstrating that the change in objectives was valid or that the sampling plan was adequately re-designed.

EPA Response: EPA disagrees with this comment. First, as stated in EPA's Proposed Plan, the Administrative Record for the Glendale North OU includes all documents providing data for the Glendale North OU, including the SAP and all SAP addenda. It appears that ITT's comments on the sampling are not based on a review of the SAP and SAP addenda. EPA believes the SAP and SAP addenda are adequate for the Glendale North OU. EPA's Quality Assurance Management Section (QAMS) reviewed and approved of the SAP and all SAP Addenda. QAMS stated that the sampling protocol and procedures were technically sound and were completed in accordance with applicable EPA guidance.

The VPBs and cluster wells for the Glendale Study Area (GSA) were installed as part of the larger San Fernando Valley Remedial Investigation effort. The project Sampling and Analysis Plan, Revised Final (SAP) completed by James M. Montgomery Consulting Engineers Inc. in March 1989 is referenced in the Glendale Study Area RI. The original objective of the VPBs was to define the vertical extent of contamination in the vadose zone. However, the objectives were subsequently revised to include evaluation of the lateral and vertical extent of contamination in the shallow groundwater of the San Fernando Valley. SAP Addenda were developed to document these changes and others regarding monitoring well siting and subsequent sampling and analysis of groundwater. The particular SAP Addenda regarding the VPBs are: Addendum No. 3 - Vertical Profile Boring Locations (March 1992) and Addendum No. 4 - Sampling and Analysis Plan for Phase 1 Vertical Profile Borings (March 1992). These documents are also referenced in the RI Report for the Glendale Study Area. The Administrative Record remains available for review at EPA's five information repositories for the San Fernando Valley Superfund sites listed in Appendix A.

2. II. A. 2. - ITT stated that not enough data points were collected to support the selection and location of the preferred alternative.

EPA Response: EPA disagrees with this comment. There are 29 EPA groundwater monitoring wells in the Glendale Study Area, including 18 cluster wells and 11 vertical profile borings. These monitoring wells have provided sufficient data to support the selection of an interim remedy to inhibit migration of the groundwater contamination and to begin to remove contaminants in the groundwater in the Glendale Study Area.

As Section 300.430 (a) 1(ii)(C) of the NCP provides, site specific data needs will reflect the scope of the site problems being addressed. The primary problem at the site which needs to be addressed by the interim action is the continuing migration of the

contaminant plume. Therefore, the site data that was required for the interim action was limited to the data necessary to design an interim action to inhibit plume migration and secondarily, to begin to remove contaminants. As provided in EPA's Guidance "Considerations in Ground Water Remediation at Superfund Sites" (Nov. 18, 1989), the data needed to design an interim system to inhibit migration of contaminants in groundwater is often more limited than the data needed for a final groundwater remedy.

3. II. A. 2. - ITT stated that the EPA Documents do not indicate the extent to which a phased approach to data collection was followed or if a phased approach (as recommended in the RI/FS Guidance) was followed at all.

EPA Response: A phased approach was used to gather data for the RI. This phased approach is documented in the SAP, SAP Addenda and in the Glendale RI Report (Section 2.3 - Description of RI Activities). Documents available in the Administrative Record indicate that a phased approach was undertaken to gather data for the RI.

Briefly, this phased approach involved conducting the following activities in sequence: 1) soil gas investigation, 2) soil sampling in the vadose zone, 3) sampling of the shallow groundwater, 4) sampling of soils and groundwater at deeper depths (cluster wells), 5) aquifer testing, and 6) initiation of a comprehensive, quarterly groundwater sampling program which is ongoing. As necessary, in areas where EPA wells did not provide coverage, EPA used data generated in facility investigations.

After the fieldwork was completed, EPA analyzed and evaluated the data gathered, conducted a risk assessment, developed computer models, etc. EPA used the data generated in each RI phase to build upon and guide subsequent steps.

4. II. A. 2. a. - ITT stated that the Glendale RI, Glendale North Feasibility Study and the Glendale North Proposed Plan do not adequately document the data collection procedures that were used and therefore, the data presented may be of less than required quality.

EPA Response: ITT must review the full Administrative Record for the Glendale North OU in order to evaluate all documents that support EPA decision-making. See EPA Response to Comment 1.

5. II. A. 2. b. - ITT commented that an insufficient number of data points were established to adequately characterize the site.

EPA Response: EPA disagrees with this comment. EPA collected sufficient data to adequately characterize the site for the purpose of developing and evaluating effective interim remedial actions to meet the objectives of inhibiting the migration of contaminants in

the groundwater in Glendale Study Area and to begin to remove contaminants from the groundwater. EPA recognizes that the groundwater contamination in the Glendale Study Area and the rest of San Fernando Valley groundwater basin has not been definitively characterized but EPA is not proposing a final groundwater remedy for the study area or the basin at this time.

As recognized by the preamble to the National Contingency Plan and numerous EPA guidances, it is appropriate to implement an interim action before site characterization is complete. 55 Fed. Reg. 8705 (March 8, 1990); "Guidance on Implementation of the Superfund Accelerated Cleanup Model (SACM) under CERCLA and the NCP," (Jul. 7, 1992), pgs 8-9; "Considerations in Ground Water Remediation at Superfund Sites," (Nov. 18, 1989) pgs 3-4. As explained in the preamble to the NCP and the recent SACM guidance, when balancing the desire to definitively characterize a site with the desire to implement protective measures quickly, EPA has a bias for early action. Id.

Therefore, it is consistent with EPA policy and the NCP to implement a groundwater pump and treat system at the GSA to inhibit migration and to begin source removal as soon as possible while completing the characterization of the site for the final remedy. "Guidance on Implementation of the Superfund Accelerated Cleanup Model (SACM) under CERCLA and the NCP, pg.8-9; "Considerations in Ground Water Remediation at Superfund Sites" (Nov. 18, 1989), pgs. 3-4; see "Considerations in Ground Water Remediation at Superfund Sites - Update" (May 27, 1992) pg. 9.

6. II. A. 2. b. - ITT stated that EPA used gross estimates to calculate the masses and distribution of key contaminants (TCE and PCE) and therefore, the estimates are unreliable. Additionally, neither the RI nor the FS provides enough information from which such mass estimates may be drawn. Therefore, the remedy EPA selects based on such estimates will not be adequate or cost effective.

EPA Response: EPA disagrees. EPA had sufficient data to develop reasonable estimates. The objectives of the interim remedy for the Glendale North OU are to inhibit migration and to begin to remove the contaminants from the groundwater. The objective of the OU is not to implement a final cleanup plan for the basin. Determining the precise mass of the contaminants at the site is not necessary to develop and evaluate interim actions to meet these interim objectives.

7. II. A. 2. b. - ITT commented that additional data are available in the GSA that were not used in the FS and that should have been included.

EPA Response: As discussed in EPA's responses to ITT Comments 1, 2, 4, and 5, EPA has collected sufficient and adequate data to

select the interim remedy and has evaluated the interim action remedial alternatives in accordance with the NCP and EPA policy regarding the data and documentation necessary to support an interim remedial action. Sufficient data were available to make decisions regarding the Glendale North OU. This data is presented not only in the RI and FS but in the other documents of the Administrative Record.

B. Modeling

8. II. B. - ITT commented that the results of the computerized modeling were over-used in the baseline risk assessment and in developing and evaluating extraction and/or disposal scenarios.

EPA Response: EPA disagrees with this comment. It was completely appropriate to conduct this type of modeling for an interim action. The purpose of this interim action was not to develop a final cleanup remedy for the Glendale North OU area or for the rest of the San Fernando Valley. EPA's Guidance on Remedial Actions for Contaminated Groundwater at Superfund Sites (December 1988) states: "Ground-water modeling performed during the RI/FS process can be used as a tool to estimate plume movement and response to various remedies." This Guidance further states that the purposes of such modeling include: the prediction of concentrations of contaminants at exposure points, evaluation of the expected remedy performance during the FS so that a time frame for achieving the cleanup objectives can be predicted and cost effectiveness comparisons can be made. This is exactly how EPA used the model for the Glendale North OU.

9. II. B. 1. - ITT stated that the results of the computerized groundwater numerical model will result in underestimated cost and cleanup time projections for the remedy, particularly because the potential mass contribution from DNAPL was excluded from consideration in the modeling.

EPA Response: Other than the no-action alternative, all of the interim action alternatives that EPA is considering are size and time bound (3,000 gallons per minute for 12 years). Therefore, there is a high degree of certainty regarding the length of operation and the cost of the interim remedy. In addition, in accordance with Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, 1988) the cost estimates developed during the FS are only required to have an accuracy of +50 percent to -30 percent. Also see EPA Responses to ITT Comments 38, 39, 46, 70, 85 and 88.

10. II. B. 2. - ITT stated that the Glendale RI, Glendale North FS, and the Glendale North OU Proposed Plan (referred to as the "EPA Documents" in ITT's comments) do not provide sufficient information to evaluate whether the numerical modeling effort was performed adequately or designed appropriately. Specifically, ITT

asserts that EPA does not explain how it accounted for supply wells and interaction with the Los Angeles River.

EPA Response: The EPA Documents represent only a small portion of the Administrative Record developed for the Glendale North OU. Additional documentation regarding the Glendale model, which is a solute transport model coupled with the basinwide groundwater flow model, is included in the Administrative Record (AR), including AR documents 97 and 255, as well as the Glendale North FS Report. The modeling was performed in accordance with EPA guidance and yielded sufficient information to develop an optimal extraction rate and configuration to address the Glendale North OU objectives of contaminant mass removal and inhibition of further contamination migration.

11. II. B. 3. - ITT stated that the numerical model is based on two unlikely assumptions: first, that storage coefficient, effective porosity, and the longitudinal and lateral dispersion remain constant throughout the aquifer, and second, that DNAPLs are not present in the groundwater. ITT believes that the EPA Documents do not provide support that these assumptions are valid.

EPA Response: Again, the Glendale North OU is an interim remedy and the model was developed and run to address the objectives of this interim remedy.

On a localized scale, parameters such as storage coefficient, effective porosity and lateral dispersion are expected to vary. However, on a regional scale, these parameters are expected to be fairly constant throughout a given aquifer zone. Therefore, the assumption made to keep these parameters constant in the numerical modeling for the Glendale North OU are considered reasonable for the purposes of estimating groundwater flow and contaminant transport.

The high concentrations of TCE that were detected in the groundwater in the Upper Zone of the Glendale Study Area (as high as 30,000 ug/l in industrial facility monitoring wells and approximately 5,000 to 12,000 ug/l in EPA monitoring wells) may indicate the presence of DNAPLs. VOC mass may be present in groundwater near source areas in the form of DNAPL. However, the objective of the solute transport modeling was to develop extraction scenarios that would inhibit contaminant migration and begin removing contaminant mass at the Glendale North OU Study Area, and not to address source identification or removal for specific sites. Also, the modeling conducted for the Glendale North OU was intended to provide a comparison between scenarios for interim remedial action, and not to predict an actual duration of extraction to cleanup/restore the aquifer. Inclusion of source terms in the model to simulate contribution of DNAPLs to the groundwater may increase the estimated mass removed by extraction at specific well locations, but would probably not alter the rate

of extraction or the proposed location of the extraction wells required for inhibiting contaminant migration or mass removal on a regional scale. Furthermore, if DNAPLs are present, they are most likely localized in source areas, and the modeling assumed that the sources would be addressed on a site-by-site basis.

12. II. B. 3. - ITT stated that a modeling sensitivity analysis should have been performed and presented in the FS.

EPA Response: A detailed sensitivity analysis was conducted on the basinwide groundwater flow model. Transport parameters (such as dispersion and effective porosity) were taken from solute transport modeling efforts conducted for the Burbank Operable Unit Feasibility Study (May 1989) which was available for review in the Administrative Record for the Glendale North OU. In addition, the sensitivity analysis which was performed for the basinwide flow model is presented in the Remedial Investigation of Groundwater Contamination in the San Fernando Valley, Remedial Investigation Report (December 1992). This document is available for review in Supplement 1 of the Glendale North OU Administrative Record.

13. II. B. 4. - ITT stated that there are an insufficient number of data points on which to base the numerical model and that the use of the model is inappropriate at this time due to the limited amount of data. Additionally, ITT stated that analyses of pump and treat options are inaccurate because of simplifying assumptions that were made in the model. ITT stated that models are typically over-used and over-interpreted and that it is inappropriate, due to the limited amount of data available, to use a model at this time. Any model should only be used as a qualitative planning tool.

EPA Response: EPA disagrees. While any model entails simplification and provides predictions which are estimates, EPA believes that the model was used in an appropriate manner, given the objectives and scope of the Glendale North OU interim remedy. See EPA Responses to ITT Comments 2, 5 and 10.

14. II. B. 4. - ITT stated that EPA should acknowledge the need for extensive field testing before proceeding with the actual design and implementation of a remedial action.

EPA Response: EPA disagrees that extensive field testing is needed before design and implementation of the interim remedial action. EPA's preferred interim remedy of a limited groundwater pump and treat system is not a technically complex remedy or an uncommon interim remedy at complex groundwater contamination sites. This approach is consistent with EPA policy of implementing groundwater pump and treat systems to inhibit migration and to begin source removal as soon as possible while developing the final remedy. "Guidance on Implementation of the Superfund Accelerated Cleanup Model (SACM) under CERCLA and the NCP, pg.8-9; "Considerations in Ground Water Remediation at Superfund Sites" (Nov. 18, 1989), pgs.

3-4; see "Considerations in Ground Water Remediation at Superfund Sites - Update" (May 27, 1992) pg. 9.

C. Risk Assessment

15. II. C. - ITT stated that the Glendale RI/FS does not conform to EPA's risk assessment guidance or exposure assessment guidelines. ITT has identified the following areas in which it asserts that the Glendale North Plume OU risk assessment does not meet EPA's own risk assessment guidelines:

- EPA failed to document and/or explain adequately the steps it took in conducting the risk assessment, particularly with respect to its risk characterization, the crucial final step of the process.
- The data underlying the risk assessment are limited and insufficient.
- The exposure assessment is unrealistic and presents an inadequate basis on which to base decision-making.
- EPA does not rely on current information sources (such as databases) in developing the risk assessment's assumptions and identifying reference doses for the chemicals of concern.
- The risk characterization is flawed because it uses bounding estimates rather than high-end estimates in evaluating risk.
- EPA does not consider sufficiently the uncertainties inherent in the risk characterization process, thereby distorting the characterization of the risk.

EPA Response: EPA disagrees with this comment. The level of detail in the risk assessment is sufficient to justify the interim action for the Glendale North OU. The preamble to the NCP and EPA policy state that a qualitative risk analysis that demonstrates the potential for risk is generally sufficient to justify interim actions such as interim actions to stabilize a site or to prevent further degradation of a site. 55 Fed. Reg. 8704; "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions" (April 22, 1991) pg. 7.

The baseline risk assessment for the Glendale North OU, presented in Section 7.0 of the Remedial Investigation Report for the Glendale Study Area (January 1992), was conducted in accordance with EPA guidance including: Guidance for Conducting Remedial Investigation and Feasibility Studies under CERCLA (USEPA, 1988), Risk Assessment Guidance for Superfund, Vol. I Health Evaluation